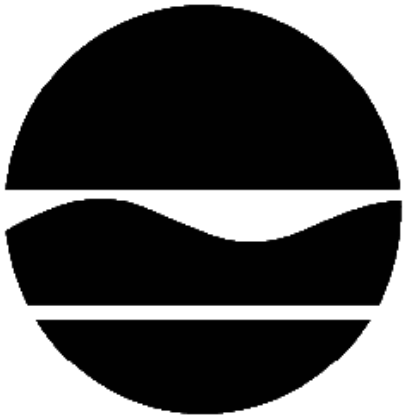
PROPOSED REMEDIAL ACTION PLAN

Saranac Lake Gas Co. Inc.
Operable Unit Number 02: Brandy Brook
State Superfund Project
Saranac Lake, Essex County
Site No. 516008
December 2015



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repositories identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repositories:

NYSDEC Region 5
Attn: Michael P. McLean
1115 Route 86 - PO Box 296
Ray Brook, NY 12977
Phone: 518-897-1242

Saranac Lake Free Library
100 Main Street
Saranac Lake, NY 12983
Phone: 518-891-4190

A public comment period has been set from:

December 30, 2015 to January 28, 2016

A public meeting is scheduled for the following date: **Wednesday January 13, 2016 6pm-8pm**

Public meeting location: **Saranac Lake Visitor Information Center**
193 River Street
Saranac Lake, NY 12983

At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent to:

Michael McLean
NYS Department of Environmental Conservation
Division of Environmental Remediation
1115 State Route 86 PO Box 296
Ray Brook, NY 12977-0296
mike.mclean@dec.ny.gov

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

Receive Site Citizen Participation Information by Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at

http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Saranac Lake Gas Company site, a vacant and abandoned former manufactured gas plant (MGP) facility, is located in a residential setting on Payeville Road in the Village of Saranac Lake, Essex County. The site is approximately 4.5 acres in size and lies east of and adjacent to the Remsen Lake Placid Travel Corridor (railway). Residential properties border the site to the north and east, and a college recreational facility and playing field borders to the south.

Site Features: Currently the main site feature is a fenced storage yard and small building. The manufactured gas plant was predominantly located within the fenced area. Other site features include Brandy Brook, a wooded area, and an access road on the northern portions of the property and woods and equipment storage on the southern portions.

Current zoning/use: The site is zoned commercial and is currently unoccupied.

Past Use of the Site: From the late 1800s to approximately the 1940s, the site was used for manufacturing lighting gas via coal gasification for the Village of Saranac Lake. The operations consisted of two gas holders, a purifier, retort operations, along with coal storage areas and offices. No original structures exist on site today with the exception of a raised concrete storage pad and concrete foundation for one of the gas holders. The past activities at the site have resulted in contamination, both on and off-site.

Operable Units (OU): The site has been separated into three OUs. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The operable units are the former gasification plant property (OU01), Brandy Brook running from the site to Pontiac Bay of Lake Flower (OU02), and Pontiac Bay/Lake Flower (OU03). OU02 and OU03 are considered offsite areas.

Site Geology and Hydrogeology: Surficial geology at the Site is predominantly medium to fine sands with some silt. Borings were conducted to as much as 56 feet below ground surface and bedrock was not encountered. Groundwater is very shallow at the site (less than 5 feet) and generally flows to the south; a small brook (Brandy Brook) runs through the northern portions the site. Brandy Brook discharges into Pontiac Bay of Lake Flower (OU02) approximately 2,000 feet downstream of the site. Sediments in Brandy Brook and Pontiac Bay of Lake Flower are a silty-fine sand, fine sandy silt with traces of clay and gravel.

Operable Unit (OU) Number 02 is the subject of this document. All future references to “Site” in this document will be referring to OU02.

A Record of Decision was issued previously for OU03. A Record of Decision will be issued for OU01 in the future.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy. Since OU02 addresses off-site areas, the remedy will not propose any land use restrictions.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

Saranac Lake Gas Company

After the remedy is selected, the Department will approach the PRPs to implement the selected remedy. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- surface water
- sediment
- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

COAL TAR
BTEX (benzene, toluene, ethylbenzene, xylenes)
PAH (Polycyclic Aromatic Hydrocarbons)

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- sediment

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

The Fish & Wildlife Resources Impact Analysis (FWRIA) for OU02 is included in the RI report and identified resources at the site and contaminant exposure pathways. A detailed ecological impact is warranted unless a remedy that addresses sediment contamination exceeding Class A Sediment Guidance Values (SGVs) is implemented.

The site investigation performed in 2013 and 2014 detected coal tar wastes and significantly elevated levels of manufactured gas plant (MGP) wastes above NYS standards, criteria, and guidance levels in the soil and groundwater at the former MGP site; along with coal tar wastes and significantly elevated levels of MGP wastes in the sediments of Brandy Brook and Pontiac Bay of Lake Flower. Brandy Brook is currently a Class A(T) stream designated as a suitable trout fishery. No surface water impacts were detected in Brandy Brook or Pontiac Bay of Lake Flower. The site presents a significant environmental threat due to the numerous media impacted and the ongoing releases from impacted sediment and soil source areas.

Manufactured gas was cooled and purified prior to distribution. The process generated a significant amount of MGP wastes in the form of tars, oils, cinders, coke, and ash. Two principal waste materials were produced in this process: coal tar and purifier waste. Coal tar is a reddish brown oily liquid by-product which formed as a condensate as the gas cooled. Purifier waste is a mixture of wood chips and iron filings which was used to remove sulfur and other compounds from the manufactured gas before the gas was distributed to the public. Purifier waste which was no longer capable of removing the impurities was often disposed of on site.

Coal tar does not readily dissolve in water. Materials such as this are commonly referred to as non-aqueous phase liquids, or NAPLs. Although most coal tars are slightly denser than water, the difference in density is slight. Consequently, they can either float or sink when in contact with water.

Specific volatile organic compounds (VOCs) of concern with coal tar are benzene, toluene, ethylbenzene and xylenes. Specific semivolatile organic compounds of concern with coal tar are numerous polycyclic aromatic hydrocarbons (PAHs).

Coal tars contain high levels of PAH compounds, often greater than 100,000 parts per million. Tars also exceed SCGs for BTEX by several orders of magnitude. In certain tar samples, enough benzene may be present to require the material be managed as a hazardous waste.

Brandy Brook field observations (including visual, olfactory, and photo ionization detector (PID) field scan responses) supplemented with analytical data were used to evaluate the presence of MGP tar or stained sediment, typically indicative of total PAH concentrations exceeding the Class A

SGVs (4 ppm). MGP-related contamination in sediment was generally observed from the surface to approximately three feet deep in Brandy Brook and the associated wetland along the entire 1,700 feet length between the former plant and Lake Flower. Sheen, stained sediment, coated sediment, blebs, saturated sediment, tar and solid tar were noted in numerous areas. Depositional areas in Brandy Brook (i.e. areas where stream flow velocity is reduced) were observed to have increased concentrations, volume, and depth of MGP-related contamination as compared to non-depositional areas. Evidence suggests that the discharge to the stream was direct via pipeline versus groundwater migration.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

The former gasification plant (OU01) is completely fenced, which restricts public access. However, persons who enter the former gasification plant could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. Contaminated groundwater at the former gasification plant is not used for drinking or other purposes and the surrounding area is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern because there are no occupied buildings on the site. Furthermore, environmental sampling indicates soil vapor intrusion is not a concern for off-site buildings. People using Pontiac Bay (OU03) for recreational purposes such as swimming and boating may come into direct contact with site-related contaminants in sediment. People may come in contact with contaminants present in the sediments of Brandy Brook (OU02) while entering or exiting the shallow creek during recreational activities

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives (RAOs) for this site are:

Groundwater

RAOs for Environmental Protection

- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.
- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of ambient water quality criteria.
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.
- Restore sediments to pre-release/background conditions to the extent feasible.

SECTION 7: SUMMARY OF THE PROPOSED REMEDY

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the FS report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as Excavation and Off-Site Disposal of Contaminated Sediments to Meet Class A Sediment Criteria and Soils to Meet Soil Cleanup Objectives.

The estimated present worth cost to implement the remedy is $3,683,000. The cost to construct the remedy is estimated to be $3,500,000 and the estimated average annual cost is $10,000.

The elements of the proposed remedy are as follows:

1. Remedial Design

Implementation of a remedial design program to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Implementation of Green remediation principles and techniques to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

*Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
*Reducing direct and indirect greenhouse gases and other emissions;
*Increasing energy efficiency and minimizing use of non-renewable energy;
*Conserving and efficiently managing resources and materials;
*Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
*Maximizing habitat value and creating habitat when possible;
*Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
*Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. An area approximately 29,000 square feet in extent within and along Brandy Brook containing MGP-related contamination exceeding the guidance values for Class A sediments or restricted residential and protection of ecological resources soil cleanup objectives (SCOs) will be excavated to an anticipated depth of 4.5 feet. The actual depth of the excavation may be constrained by conditions encountered in the field and equipment limitations. An estimated 5800 cubic yards of sediment/soil will be removed. The brook will be dewatered to allow the use of an excavator to remove the MGP-impacted sediment/soil. Following the excavation, confirmatory samples will be taken to ensure that the remedial objectives have been met prior to backfilling. Removal of the contaminated media will proceed until the sediments meet Class A guidance values and soils meet Residential and Protection of Ecological Resources SCOs. The areas excavated will be backfilled with material meeting guidance values or SCOs, as applicable, and be comprised of sand in the subsurface and suitable habitat substrate in the brook area.

The excavated sediments and soil may require dewatering and pre-treatment prior to transport. The decanted water will be collected and treated as necessary prior to discharge.

3. The excavated area and any adjacent area disturbed during remediation will be restored, to the extent feasible, using a Department-approved Restoration Plan. This will include a site

management plan to monitor success of the upland and stream restoration and any contamination that may remain due to inaccessibility or unforeseen field constraints.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation (RI) for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable standard criteria or guidance (SCGs) for the site. The contaminants are arranged into volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Groundwater

Four groundwater samples were collected from the Brandy Brook area (OU02). Only MW-201 located on the west side of the railroads tracks and immediately adjacent to the stream identified VOCs and SVOCs above SCGs. The one isolated groundwater exceedance was located near an area where highly contaminated stream sediment was identified in the brook. It is anticipated this area will be addressed (excavated) in the remedy. Refer to Figure 2.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,2,4 –Trimethylbenzene	ND[c] to 24	5	1 of 4
Ethyl benzene	ND to 19	5	1 of 4
Isopropylbenzene	ND to 5.3	5	1 of 4
Total Xylenes	ND to 20	5	1 of 4
SVOCs			
Acenaphthene	4.7 to 31	20	1 of 3
Napthalene	0.94 to 290	10	1 of 3

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).
c- ND = no contaminants detected above the method detection limit.

Based on the findings of the RI, the presence of coal tar has resulted in the contamination of groundwater adjacent to Brandy Brook.

Soil

Nine soil samples (surface and subsurface) were collected and laboratory analyzed, the majority directly adjacent to Brandy Brook. Soil samples were collected to as deep as of 5-7 feet to assess soil contamination impacts to groundwater. VOCs, SVOCs, one pesticide (alpha-BHC), and one inorganic (chromium) were detected above soil cleanup objectives. The detected metal and pesticide are not site contaminants of concern. Refer to Figure 2.

Table 2 – Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Residential Use SCG[b] (ppm)	Frequency Exceeding Residential SCG	Protection of Ecological Resources (PER) SCGs	Frequency Exceeding PER SCG
VOCs					
Xylene (mixed)	ND to 1.8	100	0 of 9	0.26	1 of 9
SVOCs					
Benzo(a)anthracene	ND to 12	1	3 of 9	NS[c]	
Benzo (a) Pyrene	ND to 22	1	3 of 9	2.6	2 of 9
Benzo(b)fluoranthene	ND to 21	1	3 of 9	NS	
Benzo(k)fluoranthene	ND to 8.6	1	3 of 9	NS	
Chrysene	ND to 14	3.9	3 of 9	NS	
Dibenz(a,h)anthracene	ND to 2.8	1	3 of 9	NS	
Indeno(1,2,3-cd)pyrene	ND to 12	0.5	3 of 9	NS	
Metals					
Chromium	1.5 to 4.6	22	0 of 9	1	4 of 9
Pesticides					
Alpha-BHC	ND to 0.89	0.097	1 of 9	0.04	1 of 9

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Residential Use, unless otherwise noted.
c-no SCG specified.

Based on the findings of the RI, the presence of coal tar has resulted in the contamination of soil adjacent to Brandy Brook.

Surface Water

Four surface water samples were collected from Brandy Brook (OU02). No contaminants of concern above SCGs were identified in the sample results.

Sediments

Fifty six sediment samples were collected in Brandy Brook (OU02). Of the fifty six collected, nineteen were laboratory analyzed and the results are shown in Figure 2. Sediments throughout Brandy Brook show evidence of impact from MGP-related contamination. Based on PAH concentrations in OU02 these sediments are classified as Class C meaning they are considered "highly contaminated and likely to pose a risk to aquatic life". Coal tar in the form of dense non aqueous phase liquid (DNAPL), product and/or staining was present in nineteen of the fifty six borings advanced into the brook during the remedial investigation; many samples with obvious DNAPL were not laboratory analyzed. The observed vertical extent of MGP-impacted sediments within OU02 generally ranges from the surface to three feet deep in Brandy Brook and the adjoining soil.

Four pesticides were also identified with levels just above the Freshwater Sediment Class B Guidance Values at sample location SD-04, SD-05, and SD102A. Although not MGP related, the locations where the samples were collected are within the extent of MGP-impacted sediment/soil and will be addressed in the remedy. Refer to Figure 2.

Table 3 – Sediment

Detected Constituents	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)	Frequency Exceeding SCG
VOCs			
1,2,4-Trimetyhlbenzene	ND to 14	3.4	2 of 19
Benzene	ND to 1.2	0.53	1 of 19
Ethyl Benzene	ND to 7.6	0.43	3 of 19
Isopropylbenzene	ND to 2	0.21	2 of 19
Toluene	ND to 9	0.93	1 of 19
Xylenes, o	ND to 1.7	0.82	1 of 9
Xylenes, m&p	ND o 4.8	0.59	2 of 9
Xylenes, Total	ND to 19	0.59	2 of 19
SVOCs			
Total PAHs	ND to 3889	4	10 of 19
Pesticides/PCBs			
4,4'-DDE	ND to 0.053	0.044	1 of 9
4,4'-DDT	ND to 0.11	0.044	2 of 9
Endosulfan I	ND to 0.0082	0.001	1 of 9
Endosulfan II	ND to 0.016	0.001	1 of 9

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in sediment;
b - SCG: The Department's Technical Guidance for Screening Contaminated Sediments.

Based on the findings of the Remedial Investigation, the presence of MGP wastes has resulted in the contamination of sediment.

The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation and be evaluated by the remedy selection process are coal tar, BTEX (benzene, toluene, ethylbenzene, xylenes) and PAHs.

Exhibit B

Description of Remedial Alternatives

Numerous remedial technology alternatives were evaluated for remediation of Brandy Brook (OU02). A technology screening process was performed and included evaluating monitored natural attenuation, in-situ treatment including biological, chemical, and physical treatment, solidification, capping, and excavation. Many were eliminated due to costs, ineffectiveness, difficulty of implementation, and unacceptability. The following alternatives were considered based on the remedial action objectives (RAOs) to address the contaminated media identified at the site as described in Exhibit A. Refer to Section 6.5.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2A: Excavation and Off-Site Disposal of Contaminated Sediments to meet Class A Sediment Criteria and Soils to Meet Soil Cleanup Objectives

This alternative requires dewatering and diverting Brandy Brook and the use of an excavator to remove MGP-impacted sediment and soils. The means and methods for brook diversion will be determined during remedial design. Excavation will begin near the former gasification plant (OU01) and commence downstream to Pontiac Bay (OU03). Culverts along Brandy Brook will be evaluated for MGP-impacted sediment and soil and cleaned out or replaced as necessary. An area approximately 29,000 square feet in extent in or along Brandy Brook containing MGP-related contamination above SCGs will be excavated to an anticipated average depth of 4.5 feet. An estimated 5,800 cubic yards of sediment/soil will be removed. Sediments will be removed until Class A sediment criteria is achieved. Soils will be removed until both residential and protection of ecological resource criteria is achieved. Following the excavation, confirmatory samples will be taken to ensure that the remedial objectives have been met prior to backfilling. The areas excavated will be backfilled with material meeting Class A sediment guidance values for sediments and residential or Protection of Ecological Resources SCOs for soil, as applicable. Backfill material will likely be comprised of sand in the subsurface and suitable habitat substrate in the top two feet.

The excavated soils and sediments must be temporarily stockpiled, and solidified/dewatered as necessary. Any decanted water resulting from this handling will be collected and treated through an on-site water treatment system. Off-site disposal at a thermal desorption facility or other acceptable disposal facility is anticipated.

It is estimated that the work will occur over one construction season. Long term monitoring to ensure effectiveness of the remedy and habitat restoration will occur.

Present Worth: *$3,683,000*
Capital Cost: *$3,500,000*
Annual Costs: *$10,000*

Alternative 2B: Excavation and Off-Site Disposal of Contaminated Sediments and Soils to meet Pre-Release Conditions

This alternative also requires dewatering and diverting Brandy Brook and the use of an excavator to remove MGP-impacted sediment and soils. The means and methods for brook diversion will be determined during remedial design. Excavation will begin near the former gasification plant (OU01) and commence downstream to Pontiac Bay (OU03). Culverts along Brandy Brook will be evaluated for any MGP-impacted sediment and soil and cleaned out or replaced as necessary. An area approximately 38,000 square feet in extent in or along Brandy Brook containing any and all MGP-related contamination will be excavated to an anticipated average depth of 5.5 feet. An estimated 9,290 cubic yards of sediment/soil will be removed to pre-release conditions. Following the excavation, confirmatory samples will be taken to ensure that the remedial objectives have been met prior to backfilling. The areas excavated will be backfilled with material meeting Class A sediment guidance values or unrestricted soil criteria. Backfill material would likely be comprised of sand in the subsurface and suitable habitat substrate in the top two feet.

The excavated soils and sediments must be temporarily stockpiled, and solidified/dewatered as necessary. Any decanted water resulting from this handling will be collected and treated through an on-site water treatment system. Off-site disposal at a thermal desorption facility or other acceptable disposal facility is anticipated.

It is estimated the work will occur over one construction season. Long term monitoring to ensure effectiveness of the habitat restoration will occur.

Present Worth: *$4,490,000*
Capital Cost: *$4,373,000*
Annual Costs: *$10,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
1. No Action	0	0	0
Alternative 2A: Excavation and Off-Site Disposal of Contaminated Sediments to meet Class A Sediment Criteria and Soils to Meet Soil Cleanup Objectives	*$3,500,000*	*$10,000*	*$3,683,000*
Alternative 2B: Excavation and Off-Site Disposal of Contaminated Sediments and Soils to meet Pre-Release Conditions	*$4,373,000*	*$10,000*	*$4,490,000*

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 2A: Excavation and Off-Site Disposal of Contaminated Sediments to meet Class A Sediment Criteria and Soils to Meet Soil Cleanup Objectives as the remedy for this site. Alternative 2A would achieve the remediation goals for the site by removing all impacted sediments and soils considered harmful to aquatic life, recreational users of the brook, and adjacent residences. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 2.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study (FS) report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 1 does not provide any protection to public health and the environment and will not be evaluated any further.

Alternative 2A would protect public health and the environment through eliminating exposure pathways through excavation. The remedial alternative would achieve the RAOs for sediment/soil in Brandy Brook (OU02), detectable concentrations of contaminants may remain in the sediment and soil.

Alternative 2B would also protect public health and the environment through eliminating exposure pathways through excavation. Alternative 2B would achieve RAOs for sediment/soil by removing all sediment/soil that contain any detectable concentrations of contaminants.

Both alternatives would meet Class A sediment criteria meaning remaining sediment would present no potential for risk to aquatic life or wildlife.

Alternative 2B rates highest for Overall Protection of Public Health, followed closely by Alternative 2A.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternatives 2A and 2B would meet Chemical-Specific SCGs by removing sediment contamination in excess of the Class A SGVs.

Location-Specific SCGs would be triggered for Alternatives 2A and 2B associated with construction within a flood plain and fresh water body. Action-Specific SCGs for these alternatives would be associated with dust

and odor control, erosion and sediment control, transportation and disposal of remediation wastes, and stream restoration. Both alternatives would maintain current flood plain storage capacity.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Alternatives 2A and 2B have high long-term effectiveness because excavated sediment/soil will be transported off-site for treatment or disposal following excavation and would not limit future use of OU02 - Brandy Brook.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2A will reduce the toxicity, mobility, and volume of on-site MGP-impacted sediment/soil by removing and disposing of MGP-impacted sediment exceeding the Class A SGVs. Remaining sediment within Brandy Brook would present little or no potential for risk to aquatic life. Contaminated soils would be removed to achieve Residential and Protection of Ecological Resources soil cleanup objectives.

Alternative 2B will most effectively reduce the toxicity, mobility, and volume of site contamination. This would be achieved through excavation of sediment/soil with any detectable concentrations of MGP wastes and as a result, would return the site to pre-disposal conditions.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2A and 2B have potential short-term impacts due to the large amount of construction equipment and traffic required for off-site transportation of sediment/soil, as well as the need for odor control measures.

Both alternatives will meet their respective remedial objectives upon completion of construction activities. Alternative 2B will require a slightly more extensive excavation and will require a longer construction period than Alternative 2A. Therefore, Alternative 2A rates slightly higher for Short-Term Effectiveness and Impacts than Alternative 2B.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

There would be some technical issues with implementing Alternatives 2A and 2B; associated primarily with access, stream diversion/dewatering, as well as the excavation and restoration within Brandy Brook. State or Federal regulations for construction within a flood plain may complicate implementation of this alternative.

Access to Brandy Brook is currently limited, and in order to use construction equipment and to transport sediment and backfill to and from OU02, an access road will most likely be required. Implementability of these alternatives would be contingent upon cooperation of the community and land owners, in particular, property owners with culverts and gravel driveways that will be removed/altered and replaced as part of the excavation activities.

Overall, Alternative 2A rates slightly higher for implementability since it will generate less sediment and soil for dewatering, stabilization and off-site disposal.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The difference in costs between Alternatives 2A and 2B is primarily due to the quantity of sediment/soil to be excavated, dewatered and stabilized, and transported off site for disposal. Alternative 2B would provide very little additional protectiveness with the increased costs. Both alternatives would achieve maximum (Class A) sediment guidance criteria and neither would limit Brandy Brook usage.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

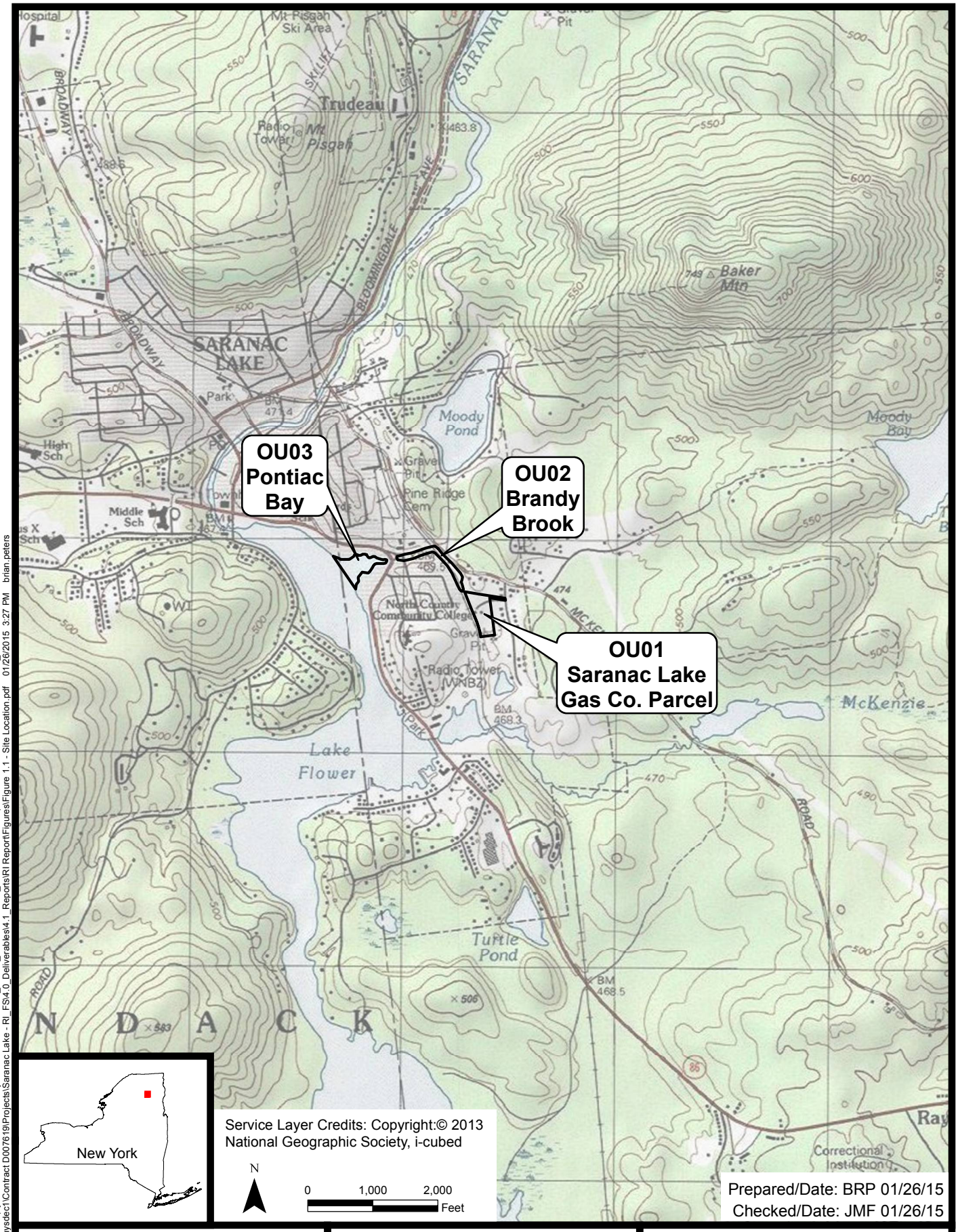
The current and reasonably anticipated future use of the land through which Brandy Brook flows is mixed residential and commercial. Recreational use (fishing) is also possible in Brandy Brook (OU02) itself. Surface water from Brandy Brook flows directly into Pontiac Bay of Lake Flower (OU03), which is used for recreational use.

Alternatives 2A and 2B will be compatible with current land use and reasonably anticipated future land use. Alternatives 2A and 2B rate equally for land use.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 2A: Excavation and Off-Site Disposal of Contaminated Sediments to meet Class A Sediment Criteria and Soils to Meet Soil Cleanup Objectives is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion. It provides nearly the same degree of long-term effectiveness and reduction in contaminant volume as removal to pre-release conditions, and the mechanical excavation component provides a high level of effectiveness in an implementable and cost-effective manner.



NYSDEC Site # 516008
Saranac Lake Gas Co., Inc.
Saranac Lake, New York

MACTEC

Site Location Map

Project 3612132271 Figure 1

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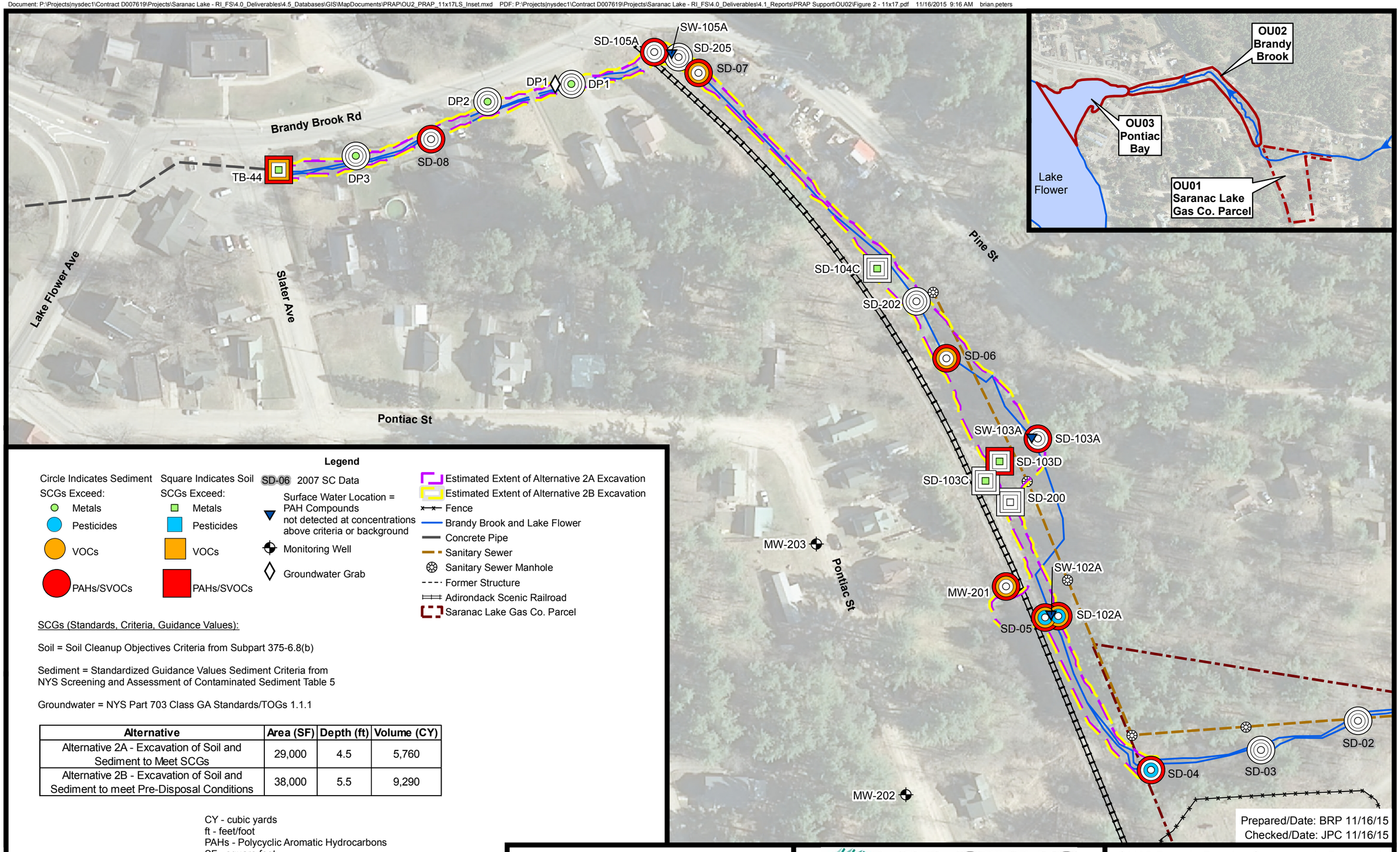

Legend

Circle Indicates Sediment
SCGs Exceed:
- Metals
- Pesticides
- VOCs
- PAHs/SVOCs

Square Indicates Soil
SCGs Exceed:
- Metals
- Pesticides
- VOCs
- PAHs/SVOCs

SD-06 2007 SC Data

Surface Water Location = PAH Compounds not detected at concentrations above criteria or background

Monitoring Well

Groundwater Grab

- Estimated Extent of Alternative 2A Excavation
- Estimated Extent of Alternative 2B Excavation
- Fence
- Brandy Brook and Lake Flower
- Concrete Pipe
- Sanitary Sewer
- Sanitary Sewer Manhole
- Former Structure
- Adirondack Scenic Railroad
- Saranac Lake Gas Co. Parcel

SCGs (Standards, Criteria, Guidance Values):

Soil = Soil Cleanup Objectives Criteria from Subpart 375-6.8(b)

Sediment = Standardized Guidance Values Sediment Criteria from NYS Screening and Assessment of Contaminated Sediment Table 5

Groundwater = NYS Part 703 Class GA Standards/TOGs 1.1.1

Alternative	Area (SF)	Depth (ft)	Volume (CY)
Alternative 2A - Excavation of Soil and Sediment to Meet SCGs	29,000	4.5	5,760
Alternative 2B - Excavation of Soil and Sediment to meet Pre-Disposal Conditions	38,000	5.5	9,290

CY - cubic yards
ft - feet/foot
PAHs - Polycyclic Aromatic Hydrocarbons
SF - square feet

N

0 50 100 Feet

Essex County color digital orthoimagery (2013) obtained from New York State GIS Clearinghouse at: http://www.nysgis.state.ny.us

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OU02 Brandy Brook - Compounds Detected in Media Compared to SCGs
Project 3612132271 Figure 2